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**ARNELL UNIVERSITY,
COLLEGE OF AGRICULTURE.**

THE GENERAL COURSES IN AGRICULTURE

THE WINTER COURSE IN AGRICULTURE

AND THE DAIRY COURSE.



ANNOUNCEMENT, 1897-98.

*Kindly hand this to some young person
who is interested in Agriculture.*

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THE COLLEGE OF AGRICULTURE.

FACULTY.

JACOB GOULD SCHURMAN, A.M., D.Sc., LL.D., President.
ISAAC PHILLIPS ROBERTS, M.Agr., Director of the College of Agriculture,
Dean of the Faculty, and Professor of Agriculture.
GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Professor of Agricultural
and General Chemistry.
JOHN HENRY COMSTOCK, B.S., Professor of Entomology and General Inver-
tebrate Zoology.
LIBERTY HYDE BAILEY, M.S., Professor of General and Experimental Hor-
ticulture.
HENRY HIRAM WING, M.S., Assistant Professor of Animal Industry and
Dairy Husbandry.
MARK VERNON SLINGERLAND, B.S., Assistant Entomologist.
LOUIS ADELBERT CLINTON, B.S., Assistant Agriculturist.
GEORGE WALTER CAVANAUGH, B.S., Assistant Chemist.
ALEXANDER DYER MACGILLIVRAY, Assistant in Entomology.
* LEROY ANDERSON, M.S.A., Assistant in Dairy Husbandry.
* WALTER W. HALL, Assistant in Cheese Making.
* JARED VANWAGENEN, Jr., M.S.A., Assistant in Butter Making.
* HUGH CHARLES TROY, B.S.A., Assistant Chemist.
* CLOUGH WILLIAM SIMS, B.S., M.A., Assistant in Agriculture.
GEORGE W. TAILBY, Foreman of the farm.
CHARLES E. HUNN, Foreman of the Garden.

CONDUCTORS AND ASSISTANTS IN UNIVERSITY EXTENSION WORK IN AGRICULTURE.

1897
JOHN WALTER SPENCER, Conductor in the Western District.
JOHN LEMUEL STONE, B.S.A., Assistant.
GEORGE TOWNSEND POWELL, Conductor in the Eastern District.
MARY FARRAND ROGERS, B.S., Assistant.
ANNA BOTSFORD COMSTOCK, B.S., Assistant in Nature Studies.
GEORGE A. SMITH, Conductor of Dairy Instruction.
WALTER W. HALL, Assistant in Cheese Making.
HOWARD BURT CANNON, B.S., Chief Clerk.
EDWARD A. BUTLER, Accountant.
JULIA Z. KELLY, Stenographer.

* Appointed for 1897.

The College of Agriculture comprises the Departments of General Agriculture ; Animal Industry and Dairy Husbandry ; Horticulture and Pomology ; Agricultural Chemistry ; General and Economic Entomology ; the Agricultural Experiment Station and University Extension Work in Agriculture.

EQUIPMENT.

The University grounds consist of 270 acres of land, bounded on the north and south by Fall Creek ravine and Cascadilla Gorge respectively. One hundred and twenty-five acres of the arable land are devoted to the use of the Agricultural Department. This part of the domain is managed with a view not only to profit, but also to illustrate the best methods of general agriculture. A four years' rotation is practiced on the principal fields ; one year of clover, one of corn, one of oats or barley, and one of wheat. A dairy of twenty cows, a flock of sheep, some fifteen horses and colts, and other live stock are kept upon the farm. Nearly all of these animals are grades, bred and reared with the single view of giving object lessons which can be practiced with profit by the students on their return to their homes. A four story barn provides for housing all the animals, machinery, tools, hay, grain, and manures. The stationary thresher, feed-cutter, chaffer, and other machinery are driven by steam power. The barn also furnishes many facilities for carrying on investigations in feeding and rearing all classes of domestic animals.

The barn is also furnished with a well equipped piggery and tool house. Not far from the main barn are four buildings devoted to poultry raising. These buildings are equipped with improved appliances for incubating eggs and have suitable yards attached for rearing domestic fowls.

The agricultural class room is provided with a collection of grains and grasses, implements of horse and hand culture, and various appliances for carrying on instruction and conducting investigations. The whole plant is managed with a view to the greatest economy consistent with the greatest efficiency in imparting instruction.

THE DAIRY BUILDING, a two-story stone structure 45x90 feet, was built from an appropriation of \$50,000 by the Legislature of 1893. It provides lecture rooms, laboratories, and offices, besides two large rooms for butter and cheese making, both of which are fully equipped with modern machinery and appliances. Automatic electric apparatus for controlling the temperature in cheese curing rooms, refrigerator room, lockers and bath rooms are also provided. The whole building is thoroughly heated and ventilated, and power is furnished by a sixty horse-power boiler and a twenty-five horse-power Westinghouse engine.

THE AGRICULTURAL MUSEUM occupies rooms on the second floor of Morrill Hall. It contains, 1. The Rau Models, being one hundred and eighty-seven models of plows made at the Royal Agricultural College at Würtemberg, under the direction of Prof. Rau, and arranged and classified by him for the Paris Exposition of 1867. 2. Engravings and photographs of cultivated plants and animals, obtained at the various agricultural colleges of Europe. 3. A collection of the cereals of Great Britain, being a duplicate of that in the Royal Museum of Science and Art at Edin-

burg, presented by the British government. 4. A collection of agricultural seeds. 5. A large number of models representing a great variety of agricultural implements. The class room has been provided with special sets of diagrams and other appliances designed to illustrate the lectures on agriculture.

THE HORTICULTURAL DEPARTMENT EQUIPMENT comprises about ten acres of land variously planted, forcing houses, and a museum.

The gardens and orchards contain the fruits which thrive in the north in considerable variety, and in sufficient quantity to illustrate methods of cultivation. Nursery grounds are also attached, in which are growing many species of economic plants from various parts of the world. The fruits comprise something more than sixty varieties of grapes, over fifty of apples, fifty of plums, and other fruits in proportion. A dwarf pear orchard of 300 trees, and other representative orchards, comprise the remainder of the field space, excepting such as is set aside for vegetable gardening and floriculture. There is also a collection of one hundred varieties of hardy roses and various other ornamental and interesting plants.

The forcing-houses are eight in number and cover about 6,000 square feet of ground. These, in connection with store-rooms and pits, afford excellent opportunities for nursery practice, for the study of the forcing of all kinds of vegetables and for some kinds of floriculture. A laboratory house, with space for forty students, is used for instruction in propagation of plants, pollination and the common greenhouse operations. There is also a mushroom house 14 x 80 feet and a reading room for horticultural students.

The museum comprises two unique features,—the garden herbarium and the collection of photographs. The herbarium, which is rapidly assuming large proportions, is designed to comprise all varieties of all cultivated species of plants, and it is an indispensable aid to the study of garden botany and the variation of plants. The collection of photographs comprises about 5,000 negatives, with prints representing fruits, flowers, vegetables, illustrative landscapes, glass houses, and horticultural operations. A very large collection of machinery and devices for the spraying of plants is at the disposal of students. Charts and specimens in some variety complete the museum and collection.

The library has files of many of the important horticultural and botanical periodicals and a good collection of general horticultural literature.

THE ENTOMOLOGICAL CABINET contains, in addition to many exotic insects, specimens of a large proportion of the more common species in the United States. These have been determined by specialists, and are accessible for comparison. The collection includes many sets of specimens illustrative of the metamorphoses and habits of insects. The laboratory is also supplied with a large collection of duplicates for the use of students; and is equipped with microscopes and other apparatus necessary for practical work in entomology.

The insectary of the Agricultural Experiment Station affords facilities to a limited number of advanced students for special investigations in the study of the life history of insects, and for experiments in applied entomology.

THE CHEMICAL DEPARTMENT is housed in a three story brick building, 126 feet in length and of an average width of 60 feet. The department is liberally equipped with varied appliances necessary to give instruction to four hundred students in General and Agricultural Chemistry.

ADMISSION TO THE FOUR YEARS COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE.

(*For admission to Special and Winter Courses see p. 15.*)

CONDITIONS OF ADMISSION.

Candidates must be at least *sixteen* years of age, or, if women, *seventeen*. They must have certificates of good moral character, and students from other colleges or universities are required to furnish from those institutions certificates of honorable dismissal.

Candidates for admission must file their credentials and obtain permits for examination at the Registrar's office. The results of examinations may be ascertained from the Registrar.

ADMISSION WITHOUT EXAMINATION.

I. ON THE REGENTS' DIPLOMA.

Diplomas issued by the Regents' of the University of the State of New York are accepted in the place of examinations in all the subjects required for entrance which are covered by such diplomas, including, upon the recommendation of the University departments concerned, the subjects of French and German. A statement from the teacher giving in detail the work done and the proficiency attained in these two subjects must be submitted by the holder of the diploma.

Certificates and pass cards issued by the Regents' are not accepted unless they are presented by the holder of a Regents' Diploma.

To secure exemption from the entrance examination in English (see page 7), the diploma must cover eight academic English counts, including English Composition, or three full years of the English course established by the Regents, February, 1893.

Application for credit in all subjects for which credit is desired, must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

Diplomas and statements should be sent by mail to the Registrar before the opening of the term.

II. ON CERTIFICATE.

The following rules and regulations have been adopted by the Faculty of Cornell University on the subject of admission by certificate :

I. Certificates of work done in public or private schools, in or out of the state, will not be accepted in lieu of examinations, unless the applicant has completed a full course in the school, and has been duly graduated after at least one year in the

school, and the University authorities are satisfied regarding the standing of the school.

2. The application for the admission of a student by certificate must be made by the principal of the school and not by the candidate himself.

3. The application from the principal must be accompanied by full and specific information with regard to the completeness and thoroughness of the studies and course in which instruction is given. In case a catalogue or circular is published, a copy thereof should also be furnished.

4. Certificates from schools whose students prove to be imperfectly fitted, will ultimately not be considered.

5. Subjects in which an examination has been passed for admission to the school, may be included in the certificate, but in all cases the full information called for by the blank should be given.

6. *No school certificate will be accepted in place of the entrance examination in English, (see pages 7, 8 and 9.)*

7. The committee having charge of the acceptance of certificates may meet at any time during the collegiate year. but the certificate should be forwarded as soon after the graduation of the student as is possible, and at least as early as the first of September.

8. The University does not engage in advance to accept the certificates of any school, and the previous acceptance of such certificates merely raises the presumption that similar certificates may be accepted again but does not establish a permanent right to such acceptance.

Application for credit in all subjects for which credit is desired, must be made at the time of the admission of the applicant, and not be postponed to any later date in his course.

All communications on this subject and all certificates must be addressed to the Registrar, from whom also blank forms for certificates may be obtained.

ADMISSION ON EXAMINATION.

Examinations in all the subjects required for admission to the University are held, *at Ithaca only*, twice in the year as follows: 1. In June, at the end of the spring term; 2. In September, at the beginning of the fall term. No examination of candidates for admission will be held at any other time or place. In 1897 these examinations will begin on Friday, June 11, and Tuesday, Sept. 14. Specimen copies of examination papers will be sent on application to the Registrar.

1. THE PRIMARY ENTRANCE EXAMINATIONS.

(Required for the four years course, but not sufficient for admission to that course without the advanced examinations indicated on pp. 10-11).

1. In *English*. One hour of examinations is assigned to answering questions upon the books marked *A*. Two more hours are occupied with writing three essays (250 words each) upon subjects taken from the books marked *B*.

The books prescribed for 1897 are: *A*. Shakespeare, *As You Like It*; De Foe,

History of the Plague in London; Irving, Tales of a Traveller; Hawthorne, Twice Told Tales; Longfellow, Evangeline; George Eliot, Silas Marner. *B.* Shakespeare, The Merchant of Venice; Burke, Conciliation with America; Scott, Marmion; Macaulay, Life of Samuel Johnson.

For 1898: *A.* Milton, Paradise Lost, Books i and ii; Pope, Iliad, Books i and xxii; The Sir Roger de Coverly Papers in the Spectator; Goldsmith, the Vicar of Wakefield; Coleridge, The Ancient Mariner; Southey, Life of Nelson; Carlyle, Essay on Burns; Lowell, The Vision of Sir Launfal; Hawthorne, The House of the Seven Gables. *B.* Shakespeare, Macbeth; Burke, Conciliation with America; De Quincey, Flight of a Tartar Tribe; Tennyson, The Princess.

For 1899: *A.* Dryden, Palamon and Arcite; Pope, Iliad, Books i, vi, xxii, xxiv; The Sir Roger de Coverly papers in the Spectator; Goldsmith, The Vicar of Wakefield; Coleridge, The Ancient Mariner; De Quincey, The Flight of a Tartar Tribe; Cooper, The Last of the Mohicans; Lowell, The Vision of Sir Launfal; Hawthorne, The House of the Seven Gables. *B.* Shakespeare, Macbeth; Milton, Paradise Lost, Books i and ii; Burke, Conciliation with America; Carlyle, Essay on Burns.

For 1900: *A.* Dryden, Palamon and Arcite; Pope, Iliad, Books i, vi, xxii, xxiv; The Sir Roger de Coverly Papers in the Spectator; Goldsmith, The Vicar of Wakefield; Scott, Ivanhoe; De Quincey, The Flight of a Tartar Tribe; Cooper, The Last of the Mohicans; Tennyson, The Princess; Lowell, The Vision of Sir Launfal. *B.* Shakespeare, Macbeth; Milton, Paradise Lost, Books i and ii; Burke, Conciliation with America; Macaulay, Essays on Milton and on Addison,

The object of the examination is to test the candidate's ability to express himself clearly and correctly; also, to test his familiarity with the works prescribed.

No candidate markedly deficient in English will be admitted to any course in the University.

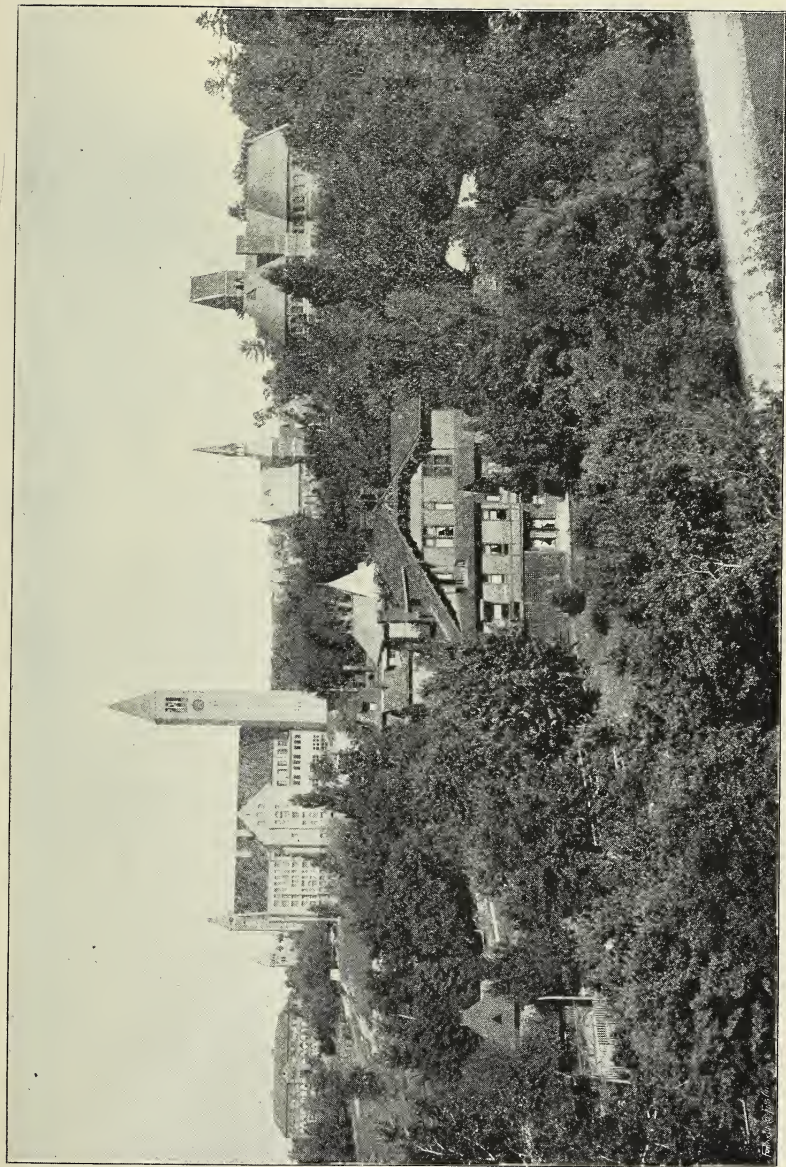
Regents' diplomas are not accepted in place of the entrance examination, unless they cover eight academic English counts, including English Composition, or three full years of the English course established by the Regents, February, 1893. School certificates are not accepted in place of the entrance examination. But candidates coming from schools the certificates of which have been accepted in other subjects may obtain exemption from the one-hour examination in books marked *A*, by submitting specimens of school work upon these books. Printed directions to this end must be procured from the Registrar, not later than the first of January.

2. In *Geography*, political and physical; as much as is contained in the larger school geographies, though more careful treatises such as those of Longmans and of Keith Johnston are recommended.


3. In *Physiology and Hygiene*; the equivalent of Martin's "The Human Body" (briefer course), and of Wilder's "Health Notes" and "Emergencies." The treatises of Hutchinson, Huxley, Jackson, and Walker are accepted as equivalents of Martin.

[In the next Register the above list will probably include only the latest editions of the secondary and short treatises of Jenkins, Martin, and Wilder, but recent works intended for use in colleges will be accepted as equivalents.]

4. In *American History*: Montgomery's "Leading Facts in American History," or its equivalent.



VIEW OF PART OF CORNELL, UNIVERSITY BUILDINGS.



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[In and after 1898, the applicant must offer two of the four following subjects :

(This requirement is the same as that agreed upon by the Conference of representatives from Columbia, Harvard, Pennsylvania, Princeton, Yale, and Cornell Universities.)

(a) The History of Greece to the death of Alexander, with due reference to Greek life, literature and art.

(b) The History of Rome to the accession of Commodus, with due reference to literature and government.

(c) English History, with due reference to social and political development.

(d) American History, with the elements of Civil Government. It is expected that the study of American History will be such as to show the development and origin of the institutions of our own country; that it will, therefore, include the colonial beginnings; and that it will deal with the period of discovery and early settlement sufficiently to show the relations of peoples on the American continent, and the meaning of the struggle for mastery.

In addition to the examination, satisfactory written work done in the secondary school, and certified by the teacher, will constitute a considerable part of the evidence of proficiency required. This requirement may be met by the presentation at the examination of a note book or bound collection of notes.

Such written work should include practice in some of the following:

Notes and digests of the pupil's reading outside the text-books; written recitations requiring the use of judgment and the application of elementary principles; written parallels between historical characters or periods; brief investigations of topics limited in scope, prepared outside the class-room, and including some use of original material where available; historical maps or charts, made from printed data and comparison of existing maps, and showing movements of exploration, migration or conquest, territorial changes or social phenomena.

The examinations in history for entrance to college will be so framed as to require comparison and the use of judgment on the pupil's part, rather than the mere use of memory. The examinations will presuppose the use of good text-books, collateral reading, and practice in written work. Geographical knowledge will be tested by requiring the location of places and movements on an outline map.]

(The following requirements in Mathematics are the same as those agreed upon by the Conference of representatives from Columbia, Harvard, Pennsylvania, Princeton, Yale, and Cornell Universities,)

5. *Plane Geometry*: Including the solution of simple original exercises, numerical problems, and questions on the metric system; as much as is contained in the larger American and English text-books.

6. *Algebra*.—Factors, common divisors and multiples, fractions, equations of the first degree with one or more unknown quantities, involution including the binomial theorem for positive entire exponents, evolution, the doctrine of exponents, radicals and equations involving radicals, quadratic equations of one or two unknown quantities and equations solved like quadratics, ratio and proportion, and putting problems into equations, and including radicals; as much as is contained in the larger American and English text-books.

[In the fundamental operations of Algebra, such as multiplication and division, the management of brackets, the solving of numerical and literal equations of the first

and second degrees, the combining and simplifying of fractions and radicals, the interpretation and use of negative quantities and of 0 and ∞ , the putting of problems into equations—the student should have distinct notions of the meaning and reason of all that he does, and be able to state them clearly in his own language; he should also be able to perform all these operations, even when somewhat complex, with rapidity, accuracy and neatness; and to solve practical problems readily and completely. In his preparatory study he is advised to solve a great many problems, and to state and explain the reason for the steps taken.

In Geometry he should learn the definitions accurately, whether in the language of the text-book or not, and in proving a theorem or solving a problem he should be able to prove every statement made, going back step by step till he rests upon the primary definitions and axioms. He should be able to apply the principles of geometry to practical and numerical examples, to construct his diagrams readily with rule and compass, and to find for himself the solutions of simple problems and the demonstrations of simple theorems. To cultivate this power of origination, he should always, before reading the solution or proof given in his text-book, try to find out one for himself, making use, if necessary, of his author's diagram; and if successful, he should compare critically his own work with his author's, and see wherein either is the better. Besides oral recitation, he is advised to write out his demonstrations, having regard both to the matter and to the form of his statements; and when written he should carefully study them to make sure, first, that he has a complete chain of argument, and secondly, that it is so arranged that without defect or redundancy one step follows as a logical consequence of another.]

In addition to the primary entrance examinations as given on pages 7–10, the applicant must pass examinations in two of the four subjects following:

1. In *Elementary French*: (a) The translation at sight of ordinary nineteenth century prose. It is important that the passages set be rendered into clear and idiomatic English. It is believed that the power of translating at sight ordinary nineteenth century prose can be acquired by reading not less than four hundred duodecimo pages from the works of at least three different authors. Not more than one-half of this amount ought to be from works of fiction. This number of pages is to include not only prepared work, but all sight reading done in class. (b) The translation from English into French of sentences or of a short connected passage to test the candidate's familiarity with elementary grammar. Elementary grammar is understood to include the conjugations of regular verbs, of the more frequent irregular verbs, such as *aller*, *envoyer*, *tenir*, *pouvoir*, *voir*, *vouloir*, *dire*, *savoir*, *faire*, and those belonging to the classes represented by *ouvrir*, *dormir*, *connaître*, *conduire*, and *craindre*; the forms and positions of personal pronouns, the uses of other pronouns and of possessive, demonstrative, and interrogative adjectives; the inflection of nouns and adjectives for gender and number, except rare cases; the uses of articles, and the partitive constructions.

Pronunciation should be carefully taught and pupils be trained to some extent to hear and understand spoken French. The writing of French from dictation is recommended as a useful exercise.

For examination no specific authors or works are designated. An examination in pronunciation and the writing of French from dictation will be included. All applicants for admission are required to present a statement from their teacher mentioning the text-books used and the authors read, including the number of pages translated from French into English and English into French.

2. In *Elementary German*: (a) The rudiments of Grammar, and especially these topics: The declension of articles, adjectives, pronouns, and such nouns as are readily classified; the conjugation of weak and of the more usual strong verbs; the commoner prepositions; the simpler uses of the modal auxiliaries; the elementary rules of syntax and word order. The proficiency of the applicant may be tested by questions on the above topics and by the translation into German of simple English sentences. (b) Translation at sight of a passage of easy prose containing no rare words. It is believed that the requisite facility can be acquired by reading not less than two hundred duodecimo pages of simple German.

Practice in pronunciation, in writing German from dictation, and in the use of simple German phrases in the class-room is recommended.

For examination no specific authors or works are designated. An examination in pronunciation and in the writing of German from dictation may be included. All applicants for admission are required to present a statement from their teacher mentioning the text-books used and the authors read, including the number of pages translated from German into English, and English into German.

3. In *Solid Geometry*, in *Advanced Algebra*, and in *Plane and Spherical Trigonometry*, as much as is contained in the standard American and English text-books.

4. In *Latin*: candidates are examined (1) in the following authors: with questions on subject-matter, constructions and the formation and inflection of words; Vergil, six books of the *Æneid*, with the prosody; Cicero, six Orations, including the four against Catiline; the translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a systematic course of at least five lessons a week for three years, the passages to be selected from Nepos or Cæsar; and (2) Latin Composition based on Bennett's or Jones's Latin Composition.

In and after June and September, 1898, the advanced entrance requirements to the course in Agriculture will be either of the groups A, B or C, as given below, or an equivalent of any one of the three groups A, B and C, may be offered provided five counts are offered. Latin counts 3, Greek, French and German 2 each, Advanced Mathematics (including Solid Geometry, Advanced Algebra, Plane and Spherical Trigonometry) 1, provided however that the student before graduation must have passed in one modern language and in Advanced Mathematics if they are not offered for entrance.

GROUP A.

1. In *Greek*: candidates are examined on (1) Grammar. A thorough knowledge of the common forms, idioms and constructions and of the general grammatical

principles of Attic prose Greek, to be tested by an examination on the prescribed portions of Xenophon (for the next five years Xenophon's *Anabasis*, Books I and II). The test is to consist in part of questions, in part of simple sentences set for translation into Greek; it may include also translation from Greek into English. (2) Attic prose at sight. Ability to translate at sight a passage adapted to the proficiency of those who have read not less than 130 Teubner pages of Attic prose. The candidate is expected to show in his translation accurate knowledge of the forms and structure of the language, and an intelligent comprehension of the whole passage. (3) Homer, Ability to translate a passage from some prescribed portion of Homeric poems (for the next three years, *Iliad*, Book I and Book II, vv. 1-493), and to answer questions designed to test the candidate's understanding of the passage, as well as questions upon poetic forms, constructions, and prosody.

2. In *Latin*: candidates are examined (1) in the following authors: with questions upon subject-matter, constructions, and the formation and inflection of words; Vergil, six books of the *Æneid*, with the prosody; Cicero, six orations, including the four against Catiline; the translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a systematic course of at least five lessons a week for three years, the passages to be selected from Nepos or Cæsar; and (2) Latin composition based on Bennett's or Jones's Latin Composition.

GROUP B.

1. In *Latin*: candidates are examined (1) in the following authors: with questions upon subject-matter, constructions and the formation and inflection of words; Vergil, six books of the *Æneid*, with the prosody; Cicero, six orations, including the four against Catiline; the translation at sight of passages adapted to the proficiency of candidates who have studied Latin in a systematic course of at least five lessons a week for three years, the passages to be selected from Nepos or Cæsar; and (2) Latin Composition based on Bennett's or Jones's Latin Composition.

2. In *Advanced French* or *Advanced German*:

(*The following requirements for admission to Cornell University in Advanced French and Advanced German are the same as those agreed upon by the Conference of representatives from Columbia, Harvard, Pennsylvania, Princeton, Yale, and Cornell Universities.*)

Advanced French: (a) The translation at sight of standard French. It is important that the passages set be rendered into clear and idiomatic English. It is believed that the necessary proficiency in translation at sight can be acquired by reading, in addition to the elementary work, not less than six hundred duodecimo pages of prose and verse from the writings of at least four standard authors. A considerable part of the amount read should be carefully translated into idiomatic English. (b) The translation into French of a connected passage of English prose. Candidates will be expected to show a thorough knowledge of accidence and familiarity with the essentials of French syntax, especially the uses of tenses, moods, prepositions and conjunctions. Careful attention should be paid to pronunciation and the uses of spoken French.

For examination no specific authors or works are designated. An examination in

pronunciation and the writing of French from dictation will be included. All applicants for admission are required to present a statement from their teacher, mentioning the text-books used and the authors read, including the number of pages translated from French into English and English into French.

Advanced German: (a) More advanced grammar. In addition to a thorough knowledge of accidence, of the elements of word formation, and of the principle uses of prepositions and conjunctions, the candidate must be familiar with the essentials of German syntax, and particularly with the uses of modal auxiliaries and the subjunctive and infinitive moods. The proficiency of the applicant may be tested by questions on these topics, and by the translation into German of easy connected English prose. (b) Translation at sight of ordinary German. It is believed that the requisite facility can be acquired by reading, in addition to the amount mentioned under elementary German, (see p. 10) at least five hundred pages of classical and contemporary prose and poetry. It is recommended that not less than one-half of this reading be selected from the works of Lessing, Schiller, and Goethe.

It is recommended that the candidate acquire the ability to follow a recitation conducted in German and to answer in that language questions asked by the instructor.

For examination no specific authors or works are designated. An examination in pronunciation and the writing of German from dictation may be included. All applicants for admission are required to present a statement from their teacher, mentioning the text-books used and the authors read, including the number of pages translated from German into English and English into German.

GROUP C.

1. In *Advanced French* as above.
2. In *Advanced German* as above.
3. In *Solid Geometry*, in *Advanced Algebra*, and in *Plane and Spherical Trigonometry*, as much as is contained in the standard American and English text-books.

[For admission to graduate work and candidacy for advanced degrees see page 53-61 of *Register*.]

INSTRUCTION.

PLAN OF INSTRUCTION.

The instruction in the College of Agriculture is comprised in the following general lines :

The Regular Course in Agriculture covers a period of four years. It is designed to afford an education as broad and liberal as that given by other departments of the University, and leads to the degree of Bachelor of Science in Agriculture.

THE COURSE IN AGRICULTURE.*

LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE.

(The figures indicate the number of hours of class-room work per week.)

<i>Freshman Year.</i>	1st Term.	2d Term.	3d Term.
French, German, } or Mathematics }	- 3 - - - - -	3 - - - - -	3
Invertebrate Zoology	3	Vertebrate Zoology 3	Entomology - - 3
English - - - - -	3 - - - - -	3 - - - - -	3
Freehand Drawing	- 3 - - - - -	3 - - - - -	3
Chemistry - - - - -	3 - - - - -	3 - - - - -	3
Hygiene - - - - -	1 - - - - -	- - - - -	-
Military Drill - - -	2	Physical Training - 4	Military Drill - - 2
<i>Sophomore Year.</i>	1st Term.	2d Term.	3d Term.
English - - - - -	2 - - - - -	2 - - - - -	2
Physics - - - - -	3 - - - - -	3 - - - - -	3
Agricultural Chem.	- 4 - - - - -	4 - - - - -	4
Political Economy	- 3 - - - - -	3 - - - - -	3
Physiology - - - - -	3	Elective - - - - -	3 - - - - -
Botany - - - - -	2 - - - - -	2 - - - - -	4
Military drill - - -	2 - - - - -	-	Military drill - - 2
Elective - - - - -	0-1 each term.		
<i>Junior Year.</i>	1st Term.	2d Term.	3d Term.
Elective - - - - -	15-18 - - - - -	15-18 - - - - -	15-18
<i>Senior Year.</i>	1st Term.	2d Term.	3d Term.
Applied Agriculture	- 6 - - - - -	6 - - - - -	6
Thesis - - - - -	- - - - -	2 - - - - -	2
Military Science - -	- - - - -	2 - - - - -	-

The remaining work of the course is elective,* with the condition that at least one-half of the entire elective work of each year, including the thesis and applied agriculture in the senior year, must be in work given by the departments of agriculture and horticulture and in the courses in agricultural chemistry and economic entomology.

It is recommended that the larger part of the remainder of the course be selected from the following courses:

Anatomical methods and laboratory, course 4.

Geology, courses 4 and 5.

Veterinary Science, courses 15 and 25.

Land Surveying, Civil Engineering, course 5.

Students not only receive instruction in the College of Agriculture but also in the

*All electives must be chosen by the student at the beginning of the year with the previous written approval of the Director.

following named Colleges and Departments: Botany, Freehand Drawing, Physics, Political Economy, Physiology, Vertebrate Zoology, Hygiene, Mathematics, French, German, and Drill and Gymnasium: *Geology, Veterinary Science, Civil Engineering, and Mechanical Engineering.* The elective work is in italics.

ADVANCED OR GRADUATE WORK IN AGRICULTURAL SCIENCE.

This instruction is designed to fit men for teachers and experimenters and it may lead to the degree of Master of Science in Agriculture, and Doctor of Science in Agriculture. The laboratories, dairy building, farm, gardens and orchards give ample facilities for the prosecution of independent work of a high character.

A yearly fellowship of an annual value of \$500 is assigned to the following group of Departments: Agriculture, Horticulture, Veterinary Science. See page 53 of Register.

SPECIAL COURSE.

The Special Course is intended for young men who cannot well spend four years in preparing themselves to become farmers and who yet wish to avail themselves of technical and practical instruction in modern scientific agriculture.

Young men who are eighteen years of age and who furnish evidence to the Director that they are able to pursue the work elected in a satisfactory manner are admitted to the Special Course without examination. The number of hours and the courses elected must be approved by the Director. This course may extend through either one or two years. The work must be done largely in the College of Agriculture.

Special students during the time they are in the University, enjoy equal advantages in all respects with students who are studying for a degree. They are admitted by vote of the Faculty upon recommendation of the Director of the College of Agriculture, and applications for admission to the Special Course should be made personally or by letter to the Director of the College.

SYNOPSIS OF COURSES.

Agriculture.—The instruction in Agriculture proper treats of soils and their preparation, fertilizers, harvesting and marketing general and special crops; laying

out and improving farms ; drainage and irrigation ; farm buildings and fences, location, plans and construction ; farm yard manures and commercial fertilizers, composition, manufacture, preservation and application ; farm accounts, business customs, rights and privileges ; employment and direction of laborers ; farm implements and machinery, use, care and repairs ; grasses and forage plants ; weeds and their eradication : swine, sheep and horse husbandry, breeds and breeding, care, management, and feeding.

The practice will include setting up and running machinery, as binders, mowers ; the sharpening and repairing of small tools, as scythes, saws, spades ; drawing up building plans and specifications ; farm book-keeping.

Dairy Husbandry.—The class-room instruction will consist of lectures upon the production of milk and its manufacture into its various products. The dairy house practice will comprise the making of butter and cheese by the most approved methods ; testing of milk as to purity and fat content ; the use and care of centrifugal separators and other creaming devices and the details of creamery and cheese factory management.

Animal Industry.—Lectures will be given on the origin and formation of the various breeds of dairy and beef cattle ; their selection and improvement ; the improvement of native cattle and formation of new breeds ; the composition of stock foods and their combinations into rations suitable for various purposes. Practice will be given in tracing and tabulating pedigrees ; judging by scale of points ; and computing rations.

Poultry Keeping.—Will include instruction in breeds and breeding ; feeding and management ; caponizing ; incubation, artificial and otherwise ; construction of poultry houses and their management.

The Experiment Station, which is a department of the University ; also offers opportunity for students to observe and study the investigations which are being carried on in many branches of animal and plant industries.

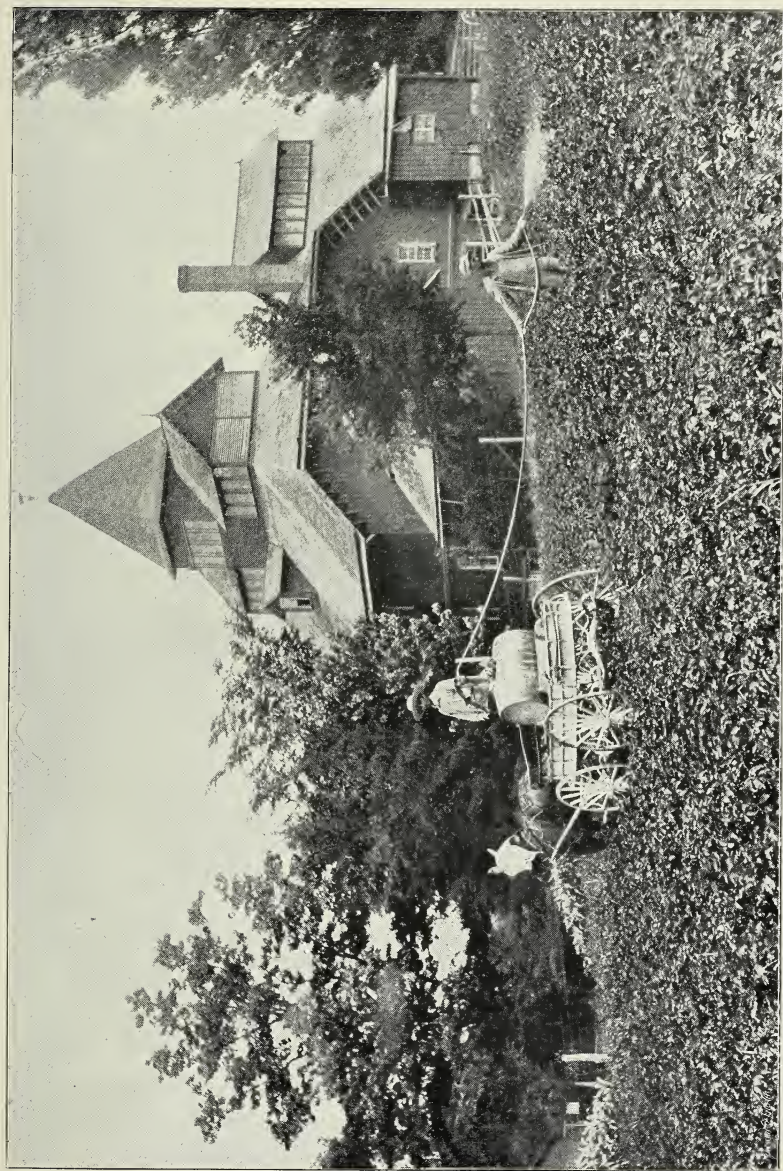
AGRICULTURE.

The following courses are offered in 1897-98 :

1. Wheat culture, preparation of soil, seeding, insects, harvesting, marketing ; farms, selection and purchase, location with regard to markets, roads, schools, society ; farm buildings, location, plans, construction, liability of contractors ; fields, shape and size ; fences and gates, construction, repairs, durability of wood ; farm and public roads, bridges and culverts ; farm yard manures, composition, manufacture, preservation, application ; commercial fertilizers, composition and use. Lectures. Fall term. Daily, except Saturday, 11. Five hours. *Morrill 19.* Professor ROBERTS.

2. Inspection of roads, bridges and farm buildings. Agricultural survey and comparison of farms ; practice in fields, shop, and barns. Fall term. T., 2-5. One hour. Professor ROBERTS.

3. Farm accounts ; business customs, rights and privileges, form of contracts,



SPRAYING POTATOES. C. U. FARM IN BACKGROUND.



WHEAT FIELD, C. U. FARM.

notes, deeds, mortgages, road laws; employment and direction of laborers; swine husbandry, breeds, feeding, management; the horse, breeds and breeding, feeding, education, care and driving; sheep husbandry, breeds and varieties, management and care, early lamb raising. Lectures. Winter term. Daily, except Saturday, 11. Five hours. *Morrill 19*. Professor ROBERTS.

4. Judging and scoring horses, swine and sheep; work in shop and barns; running engines and other farm machinery. Winter term. T., 2-5. One hour. Professor ROBERTS.

5. Farm drainage, construction, material, cost and utility; history of plows and plowing; farm implements and machinery, use, care and repairs; corn, oat, barley, flax, hop, potato and tobacco culture; grasses and forage plants; silos and silage; weeds and their eradication. Lectures. Spring term. Daily, except Saturday, 11. Five hours. *Morrill 19*. Professor ROBERTS.

6. Practice in fields and shop, use of tools, implements and farm machinery, draining, surveys and mapping. Spring term. T., 2-5. One hour. Professor ROBERTS.

7. Seminary work for advanced students. One hour. By appointment. *Morrill 19*. Professor ROBERTS.

8. For Winter-course students. Lectures on the leading subjects in all of the courses enumerated above, will be given so far as time will permit. Daily, except Saturday, 9. Five hours. *Morrill 19*. Professor ROBERTS.

9. Practice as in courses 2, 4, and 6, in sections by appointment, one afternoon for each section per week. Winter term. 2-5. Two hours. Professor ROBERTS.

Professor Roberts will be assisted by specialists in giving instruction in some of the subjects named.

10. Animal Industry. Principles of breeding, history and development, improvement and creation of dairy and beef breeds of cattle; principles of feeding, care selection and management of dairy and beef cattle. Winter and spring terms. Lectures. T., Th., 12. Practice one hour by appointment. Three hours. *Dairy Building*. Assistant Professor WING.

* 11. Dairy Husbandry; milk and butter. Fall term. Lectures. T., Th., 12. Practice two afternoons by appointment. Three hours. *Dairy Building*. Assistant Professor WING.

12. Dairy Husbandry; cheese. Winter term. Practice two days per week, 10-1, by appointment. Three hours. *Dairy Building*. Assistant Professor WING.

13. Dairy Husbandry. Laboratory work on special problems. By appointment, one to three hours. Open only to students who have had course 10. Assistant Professor WING.

14. For Winter Course Students. Animal Industry and Dairy Husbandry. Principles of breeding, feeding, and selection, care and management of dairy cattle. Daily, 8. Practice one afternoon by appointment. *Dairy Building*. Assistant Professor WING.

15. For Dairy Course Students. Winter. Lectures on milk and its products; breeding and feeding, daily, 8; lectures on subjects related to dairy husbandry,

* Will not be given in 1897.

daily, 9; practice in butter and cheese making and in dairy laboratory, daily 10-4:30. *Dairy Building*. Assistant Professor WING, Instructors HALL and VANWAGENEN, assisted by others of the faculty of the College of Agriculture.

16. Poultry; feeding, management and history of breeds; construction of henneries, incubators and brooders. Lectures. Spring term. W., F., 12. Two hours. Assistant Professor WING.

17. Practice in running incubators and brooders; judging fowls, caponizing. Open to students who take course 16. One hour, by appointment. Spring term. Assistant Professor WING.

18. For Winter Course Students. Origin, history and classification of the domestic breeds of poultry; breeding, feeding, and management; construction of buildings, incubators, and brooders. Lectures, W., F., 12. Two hours. Assistant Professor WING.

19. For Winter Course Students. Practice in judging fowls; running incubators and brooders; testing eggs, caponizing. One hour by appointment. Can only be taken in connection with course 18. Assistant Professor WING.

20. For Students in Veterinary Science. Breeding, care and management of horses, sheep and swine. Stables, construction and sanitation. Two hours. Fall term. Professor ROBERTS.

HORTICULTURE.

The instruction in Horticulture is given in ten courses. Course 1 is designed to afford a general scientific foundation for the prosecution of all studies relating to the variation and amelioration of plants under conditions of domestication and cultivation, and it has only indirect reference to horticultural methods and practices. The literary side of the instruction is offered in course 2, which designs to give a general view of writings upon plant-craft. Course 4 is intended for those advanced students, who have had some training in systematic botany, and who desire to familiarize themselves with the complex botany of cultivated plants. Courses 3, 5, 6, 7, 8, 9, are calculated to afford the latest information and methods connected with the commercial cultivation of plants, and in all of them laboratory work and field practice are important factors. Course 10 affords opportunities for investigation by advanced students, especially for postgraduates who desire to prepare themselves for experiment station work and for teaching. In this course, all subjects and hours are especially arranged for each student. Lectures upon Landscape Gardening are occasionally given in conjunction with the College of Architecture.

The following courses are offered in 1897-98:

1. Evolution of Cultivated Plants. Fall. M., W., F., 10. A discussion of the current hypotheses of organic evolution as applied to the modification of plants, particularly of those in cultivation. Open to students in all courses who have taken courses 1 and 2 in Botany. Lectures and text book. Professor BAILEY.

2. The Literature of Horticulture. Fall. F., 11. A seminary in the literature of the cultivation of plants in various parts of the world, with reviews of periodical literature. Professor BAILEY and assistants.

3. Greenhouse Construction and Management. Fall. Two hours; one hour of

lectures (W., 11), and one of laboratory work, by appointment. Professor BAILEY and assistants.

4. The Botany of Cultivated Plants. Winter. Seminary course of one hour, by appointment. Professor BAILEY.

5. Pomology. Winter. M., W., F., 10. Lectures, text book, and other class exercises upon the cultivation of fruits. Professor BAILEY and assistants.

6. Propagation of Plants. Winter. Two hours, by appointment. A practical laboratory course in the multiplication of plants,—grafting, budding, making cuttings, pollination, etc. Professor BAILEY and assistants.

7. The Theory and Practice of Spraying Plants. Spring. One hour course. Lectures and demonstrations. By appointment.

8. Field Lessons. One hour (laboratory), by appointment for pruning, and the study of orchards and plants where they grow. Spring term. Professor BAILEY.

9. Handicraft. Practical work in the forcing houses and gardens, with familiar talks. Throughout the year. One to three hours, by appointment. Professor BAILEY, Mr. HUNN, and assistants.

10. Investigation incident to previous courses. For graduates and advanced students. Throughout the year. Hours by appointment. Professor BAILEY.

Seminaries are conducted throughout the year, when requested by students. During the past year seminaries have been held on Plant-breeding, and the history of evolution and study of out-door literature. Hours do not count towards graduation. The Horticulturists' Club meets every Monday evening.

CHEMISTRY.*

16. Agricultural Chemistry. General course. Four hours. Professor CALDWELL.

17. Agricultural Chemistry. Readings from journals. For those who have had course 16. One hour. Professor CALDWELL.

ENTOMOLOGY.†

6. Economic Entomology. Winter term, two lectures per week. Assistant Entomologist SLINGERLAND.

7. Economic Entomology. Laboratory work. Structure and Classification of insects. Winter term. Assistant MACGILLIVRAY.

BOTANY.‡

VETERINARY SCIENCE.§

1. Diseases of Farm Animals. One hour. Winter term. Professor LAW.

2. General Physiology of Domestic Animals. Assistant Professor FISH.

3. Zootechny. One hour per week for one year. Professor W. L. WILLIAMS.

*All other courses in Chemistry are open to students in Agriculture.

†All other courses in Entomology are open to students in Agriculture.

‡All courses not required in the sophomore year may be elected.

§Subject to rule found on page 163 of Register.

Tuition is free to students pursuing the prescribed course in *Agriculture, and intending to complete* that course ; and to *special and graduate students in agriculture* taking at least two-thirds of their entire work in the departments of agriculture, horticulture, and in the courses in agricultural chemistry and economic entomology.

An incidental fee of \$5 per term, to cover cost of materials used, is required of all students in Agriculture, except those in the first two years of the regular course.

A fee of \$5, to cover expenses of graduation, degrees, etc., is charged to each person taking the baccalaureate degree. This fee must be paid at least ten days before Commencement.

The fee charged for an advanced degree is \$10, and it must in all cases be paid at least ten days before Commencement.

Every person taking laboratory work or practicums in chemistry, physics, zoology, or entomology, must deposit with the treasurer security for the materials to be used in the laboratory or in practicums. Supplies in the chemical or physical departments are furnished at New York City list prices. Students residing in University buildings must pay their room bills one term in advance. All the members of the University are held responsible for any injury done by them to its property.

The expense of text-books, instruments, etc., varies from \$25 to \$75 per annum.

The cost of living in Ithaca, including board, room, fuel and lights, varies from \$4 to \$10 per week. By the formation of clubs students are sometimes able to reduce their expenses to \$3.50 per week for room and board, and occasionally to even less than that amount.

A fair estimate of the yearly expenses is from \$300 to \$500, but much depends upon the personal tastes of the student.

EXPERIMENT STATION.

BOARD OF CONTROL :

THE TRUSTEES OF THE UNIVERSITY.

Station Council.

President, JACOB GOULD SCHURMAN.

Hon. A. D. WHITE,	- - - - -	Trustee of the University
Hon. B. F. TRACY,	- - - - -	President State Agricultural Society
Professor I. P. ROBERTS,	- - - - -	Agriculture
Professor G. C. CALDWELL,	- - - - -	Chemistry
Professor JAMES LAW,	- - - - -	Veterinary Science
Professor J. H. COMSTOCK,	- - - - -	Entomology
Professor L. H. BAILEY,	- - - - -	Horticulture
Professor H. H. WING,	- - - - -	Dairy Husbandry
Professor G. F. ATKINSON,	- - - - -	Botany
M. V. SLINGERLAND,	- - - - -	Entomology
L. A. CLINTON,	- - - - -	Agriculture
G. W. CAVANAUGH,	- - - - -	Chemistry
B. M. DUGGAR,	- - - - -	Botany

Officers of the Station.

I. P. ROBERTS,	- - - - -	Director
E. L. WILLIAMS,	- - - - -	Treasurer
E. A. BUTLER,	- - - - -	Clerk

The Corps of the Agricultural Experiment Station is made up as follows :

ISAAC PHILLIPS ROBERTS, M. Agr., Director and Agriculturist.
HENRY HIRAM WING, M.S., Assistant Professor of Animal Industry and Dairy Husbandry.
GEORGE CHAPMAN CALDWELL, B.S., Ph.D., Chemist.
JAMES LAW, F. R. C. V. S., Veterinarian.
JOHN HENRY COMSTOCK, B.S., Entomologist and Invertebrate Zoologist.
LIBERTY HYDE BAILEY, M.S., Horticulturist.
GEORGE FRANCIS ATKINSON, Ph.B., Botanist.
SIMON HENRY GAGE, B.S., Anatomist.
WILLARD WINFIELD ROWLEE, D.Sc., Plant Histologist.
MARK VERNON SLINGERLAND, B.S., Assistant Entomologist.
LOUIS ADELBERT CLINTON, B.S., Assistant Agriculturist.
GEORGE WALTER CAVANAUGH, B.S., Assistant Chemist.

BENJAMIN MINGE DUGGAR, M.S., A.M., Assistant Cryptogamic Botanist.
ABRAHAM LINCOLN KNISLEY, M.S., Assistant in Chemistry.
GEORGE WALTER TAILBY, Farm Foreman.
CHARLES EDWARD HUNN, Gardener.
EDWARD ARTHUR BUTLER, Clerk.
LIZZIE VERONICA MALONEY, Stenographer.

The Agricultural Experiment Station of Cornell University is a Department of the College of Agriculture. Incidentally, students may receive instruction from observing and discussing the experiments which are being carried on. The Federal Law passed March 2d, 1887, briefly outlines the object of the Experiment Station in the following words: "To aid in acquiring and diffusing among the people of the United States useful and practical information on the subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science." . . . It further provides "That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the states or territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same and as far as the means of the station will permit." The entire plant of the College of Agriculture is used, as occasion demands for conducting experiments in animal and plant growth and reproduction, and in applied, comparative and scientific research and investigations.

In pursuance of the provisions of Chapter 128 of the Laws of 1897, of the State of New York, the following persons have been appointed investigators and instructors in the College of Agriculture of Cornell University to serve throughout the state according to the needs of the several localities for a portion or all of the year.

J. W. SPENCER,
G. T. POWELL,
G. A. SMITH,

M. V. SLINGERLAND,
B. M. DUGGAR,
J. L. STONE,

A. L. KNISLEY,
C. E. HUNN,
H. B. CANNON.

THE WINTER COURSES IN AGRICULTURE AND DAIRY HUSBANDRY.

There are many farmers' sons and daughters who cannot spend two or more years at college, but who would receive great benefit from lectures and practice during the winter months. To meet the needs of such persons the following courses are offered. The term begins the first week in January of each year and extends through one University term of eleven weeks.

Persons who are of good moral character and seventeen years of age, may be admitted by the Director of the College without a formal examination, but are required to file a letter of recommendation and to satisfy him that their previous training has been such that they can pursue the studies elected with profit to themselves and credit to the University.

Students may elect either one of the following lines of study.

I. GENERAL AGRICULTURE.

Prescribed work—Agriculture, 5 hours per week.

Agricultural Chemistry, 3 hours per week.

Two hours per day of practice in educational work in barns, dairy houses, forcing houses and laboratories.

Elective. A minimum of 7 hours must be taken in addition to the prescribed work from the subjects named below :

Entomology, 2 to 5 hours per week.

Botany, 2 hours per week.

Horticulture, 2 to 5 hours per week.

Dairy Husbandry, 2 hours per week.

Animal Industry, 2 hours per week.

Poultry Keeping, 2 to 4 hours per week.

Political Economy, 1 hour per week.

Diseases of Farm Animals, 1 hour per week.

Agriculture.

The instruction in Agriculture will treat of soils and their management ; cultivation, harvesting and marketing general and special crops ; laying out and improving farms ; drainage and irrigation ; farm buildings and fences, location, plans and con-

struction; farm yard manures and commercial fertilizers, composition, manufacture, preservation and application; farm accounts, business customs, rights and privileges; employment and direction of laborers; farm implements and machinery, use and repairs; grasses and forage plants; weeds and their eradication; swine, sheep and horse husbandry, breeds and breeding, care and management. (See Animal Industry).

The practice will include setting up and running machinery, as binders, mowers, etc.; the sharpening and repairing of small tools, as scythes, saws, spades, etc.; drawing up building plans and specifications; farm book-keeping, etc.

Horticulture.

Instruction in Fruit-Culture, with practical work in the most approved methods of pruning and training, methods of planting, determination and discussion of varieties, etc. The University plantations contain all kinds of northern fruits in great variety.

Propagation and Practical Work. This course comprises practice in the methods of propagation, from the sowing of seeds to making of cuttings and budding and grafting. In addition to the lectures instruction will be given in the horticultural laboratories, green houses and orchards, special attention being paid to the propagation of ornamental plants. Practice will also be given in the preparation and application of the most approved fungicides and insecticides.

Dairy Husbandry.

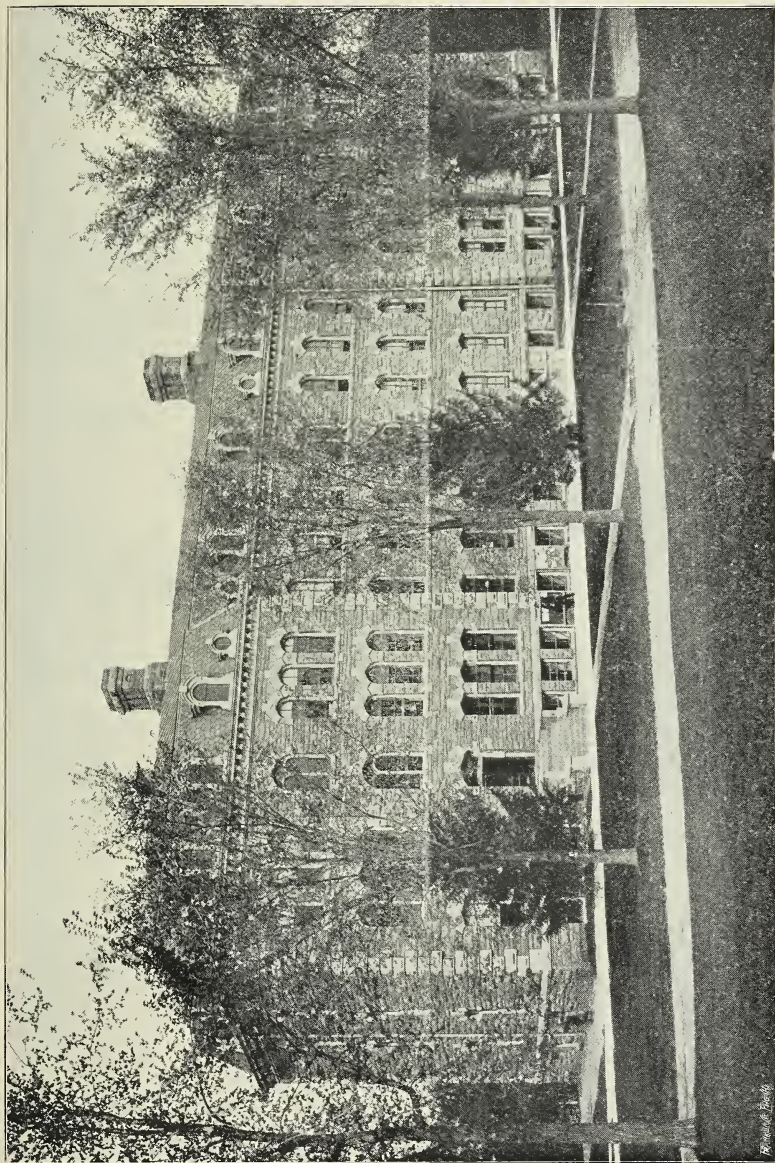
The class room instruction will consist of lectures upon the production of milk and its manufacture into various products. The dairy house practice will comprise the making of butter by the most approved methods; testing of milk as to purity and fat content; the use and care of centrifugal separators and other creaming devices, and the general details of farm dairy management.

Animal Industry.

Instruction will be given on the origin and formation of the various breeds of dairy and beef cattle; their selection and improvement; the improvement of native cattle and the formation of new breeds; the composition of stock foods and their combination into rations suitable for various purposes. Practice will be given in tracing and tabulating pedigrees; judging by scale of points; computing rations.

Poultry Keeping.

Will include instruction in feeding, management and history of breeds, principles of breeding; construction of henneries, incubators and brooders, with practice in judging and caponizing fowls, and in running incubators.



MORRILL HALL.

Entomology.

A course of two lectures per week is given on the structure and life histories of insects and on the best known methods of destroying noxious species. A laboratory course is also given in which students are taught to classify insects.

Chemistry.

A lecture course of 3 hours per week is provided in Agricultural Chemistry and in the manufacture and application of commercial fertilizers with special reference to making the profession of farming intensive, scientific and practical.

Botany.

Special course of 2 hours on the structure of plants and their diseases is provided.

Political Economy.

Twelve lectures by appointment.

II. THE WINTER DAIRY COURSE.

This course is designed primarily to meet the needs of those butter and cheese makers who desire more thorough and comprehensive instruction, and to train those who are looking toward butter and cheese making as a profession. The instruction is largely given from the standpoint of the factory, while that in the General Course in Agriculture is given with particular reference to the needs of the farm dairy.

No more than fifty can be accommodated in the building. The class will be limited to this number and applications should be made at as early a date as practicable in order to insure admission.

The instruction is partly by lectures and recitations, but largely by actual practice in the Creamery, Cheese Factory and Dairy Laboratory, the order being about as follows:

Lectures on milk and its products, 2 hours per week.

Lectures on subjects related to dairying, 10 hours per week.

Cheese room practice, twice weekly, 4-6 hours each.

Butter room practice, twice weekly, 4-6 hours each.

Dairy laboratory practice, twice weekly, 2-4 hours each.

Problems and book-keeping, 2 hours per week.

The lectures on milk include a full discussion of the structure of the milk gland, the secretion of milk and its care, and preservation during all the processes of manufacture. The lectures are supplemented by constant references to the current dairy literature as found in periodicals and experiment station publications. These lectures are given two days per week extending through the term. On alternate days there will be given short courses of lectures (two to ten in a course) on various subjects intimately related to dairy husbandry and factory management. These include the care and management of dairy cattle, the compounding and feeding of rations, the symptoms and treatment of the more common diseases of cows, the outlines of

dairy bacteriology, the care and management of engines and boilers, etc., etc. Most of these courses are given by special lecturers of the College of Agriculture.

The instruction in cheese making is given in the cheese room, and for this purpose the class is broken up into small squads, and each squad is put in charge of a vat, and the members actually make the cheese under the eye and hand of a competent instructor. The cheese factory room is equipped with the best modern apparatus.

The instruction in butter making is given in the same way as the instruction in cheese making. The creamery is also fully equipped with modern apparatus, and all the more important kinds of centrifugal separators will be run side by side. The use and care of these separators forms an important part of the creamery instruction, and is under the care of a thoroughly competent instructor.

The laboratory work consists largely in detecting adulterations and sophistications of milk by means of the Babcock tester and lactometer. Opportunity is also given to those who desire for microscopical examination of milk and its products.

The instruction classed under the head of "problems and book-keeping" is given in connection with the laboratory practice, and consists of creamery and cheese factory book-keeping, keeping of patron's accounts, declaring dividends, making reports, etc., etc.

It is the single aim to make all of the instruction at once thorough and practical.

All students in the dairy course are required to provide themselves with at least two suits of workroom uniform, consisting of overalls and jackets of *white* muslin, such as are worn by painters and paper hangers.

Students in this course and in the General Course in Agriculture as well, enjoy the advantages of the equipment of the other departments of the College of Agriculture. (See Equipment, p. 3.)

Upon completion of the Dairy Course the student may become an applicant for a Certificate of Proficiency in Dairy Husbandry upon the following general terms and conditions:

"Persons who have passed one full term in attendance upon the Dairy Course and have satisfactorily passed all of the examinations required of them may become candidates for a Certificate of Proficiency in Dairy Husbandry.

"Such candidates must spend one full season in work at an approved creamery, cheese factory or dairy. They must report regularly upon blanks furnished for the purpose, such information in regard to their factory as may be required of them, and they must hold their factory in readiness for a visit of inspection at any time.

"Upon satisfactorily completing these requirements a certificate will be granted, though under certain conditions a longer period than a single season's work may be required."

EXPENSES.

FEES PER TERM.

For general winter course students in Agriculture . . .	\$ 5.00
For general winter course students in Agriculture electing	
Dairy Husbandry	12.50
For Dairy Course students	15.00
Deposit in Dairy Laboratory	4.00

The deposits in the Entomological, Botanical and Chemical Laboratories vary from \$1.50 to \$10 per term, according to the amount and nature of work done. The expense of living in Ithaca varies from \$3.50 to \$5 per week for board and lodging.

CALENDAR.

The entrance examinations for students in the Regular Course are held in September and June. The instruction begins in the fall term, September 23, 1897 ; in the General Winter Course in Agriculture and the Dairy Course, January 3, 1898. Students may be excluded if not present at the beginning of the term.

For further particulars address I. P. Roberts, Director of the College of Agriculture, Cornell University, Ithaca, N. Y.

CORNELL UNIVERSITY—COLLEGE OF AGRICULTURE
DAIRY COURSE.

APPLICATION FOR ADMISSION.

Name of Applicant,

Date of Birth

Name and address of parent or guardian,

P. O.,

County,

State,

PREVIOUS SCHOOL TRAINING :

Name of School,

No. of terms in attendance,

STUDIES OTHER THAN COMMON BRANCHES PURSUED.

Do you use tobacco ?

Give experience if any in factory work,

REFERENCE :—I am personally acquainted with the above applicant and believe to be of good moral character, industrious and studious.

Position,

References should preferably be your teacher, pastor, or some public officer in the community.
Applicants for admission to *Winter Course in Agriculture* will fill out blank on other side.

(OVER.)

CORNELL UNIVERSITY—COLLEGE OF AGRICULTURE.
WINTER COURSE IN AGRICULTURE.

APPLICATION FOR ADMISSION.

Name of Applicant, Date of Birth,
Name and address of parent or guardian,
P. O., County, State,

PREVIOUS SCHOOL TRAINING :

Name of School, No. of terms in attendance,

STUDIES OTHER THAN COMMON BRANCHES PURSUED.

REFERENCE :—I am personally acquainted with the above applicant and believe to be of good moral character, industrious and studious.

Position,

References should preferably be your teacher, pastor, or some public officer in the community.
Applicants for admission to *Dairy Course* will fill out blank on the other side.

(OVER.)



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